UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/087,082	02/28/2002	Wolfgang Dietmaier	1803-0330-999	3192

7590 03/14/2003

PENNIE & EDMONDS LLP
1155 Avenue of the Americas
New York, NY 10036

EXAMINER
CHUNDURU, SURYAPRABHA

ART UNIT	PAPER NUMBER
1637	10

DATE MAILED: 03/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/087,082	DIETMAIER ET AL.	
	Examiner	Art Unit	
	Suryaprabha Chunduru	1637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 December 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☑ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

1. Applicants' response to the office action and amendment (Paper No. 7) filed on December 17, 2002 has been entered.

2. The supplemental IDS (Paper NO. 9) filed on January 14, 2003 has been entered and considered.

Response to Arguments

3. Applicant's response to the office action (Paper No.7) is fully considered and found persuasive in part in view of amendment and arguments.

4. With reference to the objection made in the previous office action, to the defective Oath/ Declaration, the objection is withdrawn herein, in view of Applicants' arguments

5. With reference to the rejection made in the previous office action under 35 USC 112 second paragraph, the rejection is withdrawn in view of the Applicants' amendment (Paper No.7).

6. With reference to the rejection made in the previous office action under obviousness-type double-patenting applicants' arguments have been fully considered but not found persuasive and the rejection is maintained herein since Applicants did not submit the terminal Disclaimer.

7. With reference to the rejection in the previous office action under 35 U.S.C. 103(a), applicants' arguments and amendment have been fully considered and the rejection is moot in view of the amendment and new grounds of rejection.

New Grounds of Rejection necessitated by the Amendment

8. The disclosure is objected because of the following informalities:

Claim 9 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 2. When two claims in an application are duplicates or else are so close in content that they both cover the

same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 6, 9 is rejected under 35 U.S.C. 102(b) as being anticipated by Casas et al. (Biotechniques, Vol. 20(2), pp 219-225, 1996).

Casas et al. teach a method for amplification of nucleic acid fragments from a sample, said method comprises first (primer-extension preamplification) and second (gene-specific amplification) thermocyclic amplification reactions (see page 219, column 2, paragraph 2, page 220, column 2, paragraph 1), wherein, said first amplification was carried out using completely randomized primers (see page 219, column 1, paragraph 2), and said second amplification was carried out using gene specific primers (see page 220, column 3, paragraph 2, page 221, column 1, paragraph 1), and said reactions were carried out using the same mixture of at least two DNA polymerases, at least one of which possesses 3'-5' exonuclease activity (see page 220, column 2, paragraph 1, column 3, paragraph 2, page 221, column 1, paragraph 1, column 2, paragraph 1-2, table-2). Casas et al. also teach that the method comprises (i) increase in temperature in at least some successive amplification cycles (see page 220, column 3, paragraph 1) (ii) a DNA polymerase with 3'-5' exonuclease activity and a DNA polymerase without exonuclease activity

(see column 2, paragraph 2); (iii) the sample comprises sample of cells (skin biopsies) (see page 220, column 1, paragraph 1). Thus the disclosure of Casas et al. meets the limitations in the instant claims.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

A. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Casas et al. (Biotechniques, Vol. 20(2), pp 219-225, 1996) in view of von Eggeling et al. (Hum Genet., Vol. 99, pp. 266-270, 1997).

Casas et al. teach a method for amplification of nucleic acid fragments from a sample, said method comprises first (primer-extension preamplification) and second (gene-specific amplification) thermocyclic amplification reactions (see page 219, column 2, paragraph 2, page 220, column 2, paragraph 1), wherein, said first amplification was carried out using completely

randomized primers (see page 219, column 1, paragraph 2), and said second amplification was carried out using gene specific primers (see page 220, column 3, paragraph 2, page 221, column 1, paragraph 1), and said reactions were carried out using the same mixture of at least two DNA polymerases, at least one of which possesses 3'-5' exonuclease activity (see page 220, column 2, paragraph 1, column 3, paragraph 2, page 221, column 1, paragraph 1, column 2, paragraph 1-2, table-2). Casas et al. also teach that the method comprises (i) increase in temperature in at least some successive amplification cycles (see page 220, column 3, paragraph 1) (ii) a DNA polymerase with 3'-5' exonuclease activity and a DNA polymerase without exonuclease activity (see column 2, paragraph 2); (iii) the sample comprises sample of cells (skin biopsies) (see page 220, column 1, paragraph 1). However, Casas et al. did not teach treating the sample cells with proteinase K.

Von Eggeling et al. teach a method for detecting length polymorphisms in single nucleated cells, wherein von Eggeling et al. teach that the method comprises treating the sample of cells with Protenase K, prior to the two thermocyclic amplification reactions (see page 267, column 1, paragraph 2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the method of primer-extension amplification PCR (PEP-PCR) as taught by Casas et al. with the method of lysing nucleated cells prior to PEP-PCR as taught by von Eggeling et al. which is applicable to inhibit nuclease contamination of nucleic acids because von Eggeling et al. states that 'for the purposes high sensitivity PCR, especially in PEP, precautions have to be taken to minimize contamination, which involves the physical separation of pre- and post-PCR procedures" (see page 267, column 2, paragraph 2). An ordinary

practitioner would have been motivated to combine the method of Casas et al. with the method of von Eggeling et al. in order to achieve the expected advantage of developing a high sensitive PEP-PCR method for the analysis of polymorphism.

B. Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Casas et al. (Biotechniques, Vol. 20(2), pp 219-225, 1996) in view of Ando et al. (J Clin Microbiol., Vol. 35(3), 1997).

Casas et al. teach a method for amplification of nucleic acid fragments from a sample, said method comprises first (primer-extension preamplification) and second (gene-specific amplification) thermocyclic amplification reactions (see page 219, column 2, paragraph 2, page 220, column 2, paragraph 1), wherein, said first amplification was carried out using completely randomized primers (see page 219, column 1, paragraph 2), and said second amplification was carried out using gene specific primers (see page 220, column 3, paragraph 2, page 221, column 1, paragraph 1), and said reactions were carried out using the same mixture of at least two DNA polymerases, at least one of which possesses 3'-5' exonuclease activity (see page 220, column 2, paragraph 1, column 3, paragraph 2, page 221, column 1, paragraph 1, column 2, paragraph 1-2, table-2). Casas et al. also teach that the method comprises (i) increase in temperature in at least some successive amplification cycles (see page 220, column 3, paragraph 1) (ii) a DNA polymerase with 3'-5' exonuclease activity and a DNA polymerase without exonuclease activity (see column 2, paragraph 2); (iii) the sample comprises sample of cells (skin biopsies) (see page 220, column 1, paragraph 1). However, Casas et al. did not teach sample comprising cDNA and mixture of DNA polymeases comprising taq DNA polymerase and Pwo DNA polymerase.

Ando et al. teach a method for amplifying long regions of RNA polymerase gene of small round-structured viruses having single stranded RNA genome, wherein Ando et al. teach that the method comprises a pool of cDNA sample (See page 571, column 2, paragraphs 1-3) and the mixture of DNA polymerase comprises taq DNA polymerase and pwo DNA polymerase (see page 572, column 1, lines 1-2).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the method of primer-extension amplification PCR (PEP-PCR) as taught by Casas et al. with the method of long RT-PCR as taught by Ando et al. which is applicable to amplify long regions of RNA genome because Ando et al. states that "the long RT-PCR method might be useful in the study of not only other single-stranded RNA viruses but also applicable to eukaryotic mRNAs, in which amplification of a long region has been difficult because of the secondary structure or the small amount of the template RNA available" (see page 576, column2, paragraph 1). An ordinary practitioner would have been motivated to combine the method of Casas et al. with the method of Ando et al. et al. in order to achieve the expected advantage of developing a high sensitive PEP-PCR method for the analysis of any species containing RNA genome.

Conclusion

No claims are allowable.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Suryaprabha Chunduru whose telephone number is 703-305-1004. The examiner can normally be reached on 8.30A.M. - 4.30P.M, Mon - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on 703-308-1119. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3014 for regular communications and - for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.

Suryaprabha Chunduru
March 5, 2003

JEFFREY FREDMAN
PRIMARY EXAMINER